

Name: *make ans key TP: _____

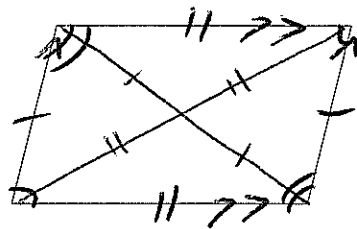
HW#77H: Quadrilateral Review
Honors Geometry
Due: Monday, April 13th, 2014

Failure to show all work and write in complete sentences will result in LaSalle!

Fill in the blanks below and mark the figure to the right accordingly.

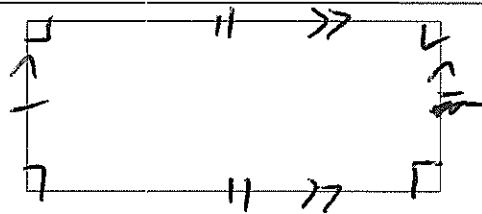
1) Parallelogram

- The opposite sides are parallel PL // AR, AP // RL
- The opp sides are congruent
- The opposite angles are congruent
- The diagonals bisect each other
- Any consecutive angles are supplementary



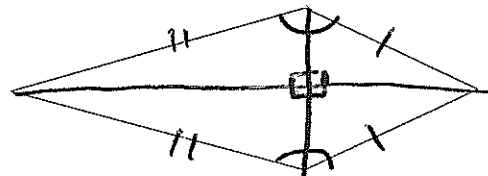
2) Rectangle

- All properties of a parallelogram apply to rectangle
- All angles are 90° angles
- The diagonals are congruent



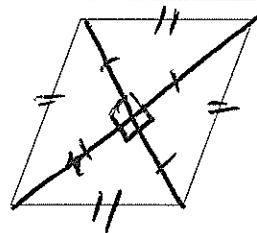
3) Kite

- Two adjacent pairs of consecutive sides are congruent
- The diagonals are perpendicular
- one diagonal is perp bisector of the other
- One of the diagonals bisect a pair of opposite angles
- One pair of opposite angles are congruent



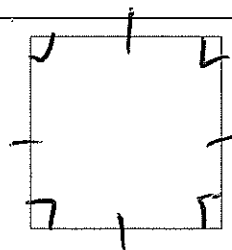
4) Rhombus

- All the properties of a parallelogram applies to rhombus
- All the properties apply to a rhombus
- All the sides are congruent, (rhombus is equilateral)
- The diagonals bisect the angles
- The diagonals are perp bisectors of each other
- The diagonals divide the rhombus into 2 congruent right triangles



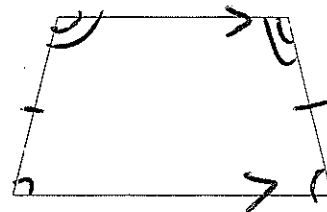
5) Square

- All properties of a rectangle apply to square
- All properties of rhombus apply by to square
- The diagonals form four isosceles right triangle

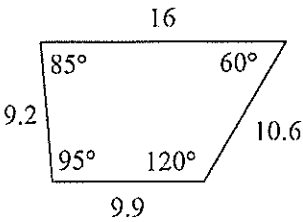
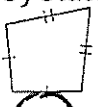
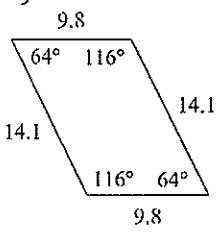


6) Isosceles Trapezoid

- The legs are congruent by definition
- The bases are parallel
- The lower base angles are congruent
- The upper base angles are congruent
- The diagonals are congruent
- Any lower base angle is supplementary to any upper base angle



Bringin' Zesty Back

<p>1) Which statement is true?</p> <p>A. All parallelograms are squares. B. All squares are parallelograms C. All quadrilaterals are parallelograms D. All kites are trapezoids</p>	<p>2) State the most specific name the figure.</p>  <p><i>Quad maybe trap?</i></p>
<p>3) State the most specific name the figure.</p>  <p>A) kite B) trapezoid C) quadrilateral D) isosceles trapezoid</p>	<p>4) State the most specific name the figure.</p>  <p><i>parallelogram</i></p>

Directions: Put in "X" for each property that applies to each type of quadrilateral.

Quadrilaterals and Their Diagonals				
Quadrilateral	Diagonals Bisect Each Other?	Diagonals Congruent?	Diagonals Perpendicular?	Diagonals Bisect Opposite Angles?
Rhombus	✓		✓	✓
Parallelogram	✓		✓	✓
Square	✓	✓	✓	✓
Rectangle	✓	✓		✓
Trapezoid				
Kite	<i>1 of them</i>		✓	<i>1 of them</i>
Isosceles Trapezoid	✓	✓	✓	

Directions: Match the description with *all* the terms that fit it.

- a. Trapezoid b. Isosceles triangle c. Parallelogram d. Rhombus
 e. Kite f. Rectangle g. Square h. All quadrilaterals

- d, c, g, f, b* Diagonals bisect each other.
- g, f, b* Diagonals are congruent.
- b, c, d, f, g* Opposite sides are congruent.
- b, c, d, f, g* Both diagonals bisect angles.
- d, e, g* Diagonals are perpendicular.
- b* Measure of interior angles sum to 360°
- b, c, d, f, g* Opposite angles are congruent. (*1 pair = kite*)
- g, d* Diagonals are perpendicular bisector of each other.

Bringin' Zesty Back

Practice Quiz Questions:

1. Which of the following have all sides congruent?

- I. Square
 - II. Rectangle
 - III. Rhombus
- A. I
 - B. I and II only
 - ☒ C. I and III only
 - D. None of the above
 - E. All of the above

2. Which of the following parallelograms have congruent diagonals?

- I. Square
 - II. Rectangle
 - III. Rhombus
- A. I only
 - ☒ B. I and II only
 - C. I and III only
 - D. None of the above
 - E. All of the above

3. Tell if the statement is always true, sometimes true, or never true.

A trapezoid is a parallelogram.

The bases of a trapezoid are parallel.

The base angles of an isosceles trapezoid are congruent.

The legs of a trapezoid are congruent.

NEVER
always
always
sometimes

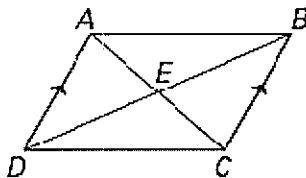
4. Name each quadrilateral – parallelogram, rectangle, rhombus and square – for which the statement is true.

- a. The diagonals bisect each other. Para, Rec, Sq, Rhom
- b. Opposite sides are congruent. Par, Rec, Sq
- c. It is equiangular and equilateral. Sq, Rhom
- d. The diagonals bisect opposite angles. Sq, Rhom
- e. The diagonals are perpendicular. Rhom, Sq
- f. It is equiangular. Rec, Sq

5.

Multiple Choice Which additional piece of information do you need to prove $ABCD$ is a parallelogram?

- ☒ A. $\overline{AB} \cong \overline{DC}$
- ☐ B. $\overline{AD} \cong \overline{BC}$
- ☒ C. $\overline{AB} \parallel \overline{DC}$
- ☐ D. A or B



6. Which statement is true?

- A. All parallelograms are rhombuses.
- B. All quadrilaterals are parallelograms
- C. All quadrilaterals are squares
- ☒ D. All rectangles are parallelograms

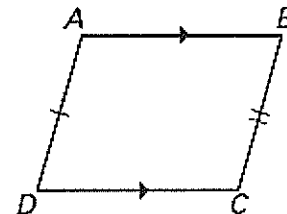
7. Which of the following statements is NOT true about parallelograms?

- ☒ a. consecutive angles are congruent
- b. opposite sides are congruent
- c. opposite angles are congruent
- ☒ d. the diagonals bisect each other

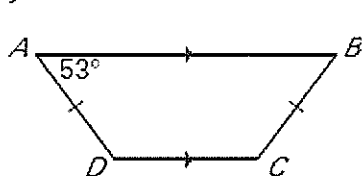
8.

Multiple Choice What kind of quadrilateral would meet the conditions of the diagram? $ABCD$ is not drawn to scale.

- ☐ A. kite
- ☐ B. rhombus
- ☒ C. trapezoid ✓
- ☐ D. square

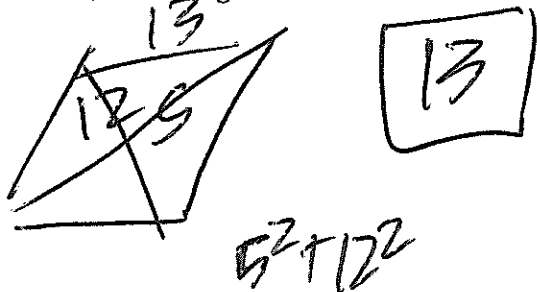


5) Find the measurements of angle B, C, and D.



$$\begin{aligned}\angle B &= 53^\circ \\ \angle C &= 127^\circ \\ \angle D &= 127^\circ\end{aligned}$$

7) If one diagonal of a rhombus is 10 cm and the other 24 cm, how long is each side of the rhombus?



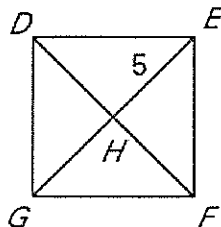
8) Find the length of DE.

A. 5

☒ B. $5\sqrt{2}$

C. 6

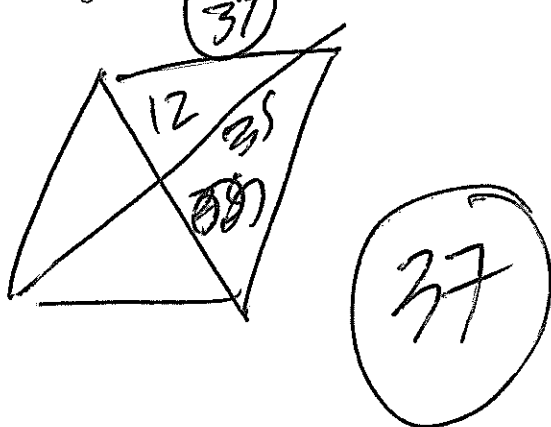
D. $6\sqrt{2}$



Justify your answer in a sentence.

each side is $45 \cdot 45 = 90$
 $mp = 2 \cdot \sqrt{2}$

9) If one diagonal of a rhombus is 24 cm and the other is 70 cm, how long is each side of the rhombus?



6) Which of the following quadrilaterals have diagonals that are perpendicular?

- I. Parallelogram
- II. Rhombus
- III. Square
- IV. Kite

- A. I
- B. II and III only
- ☒ C. II, III, and IV
- D. II and IV only
- E. All of the above

To prove your answer above, draw four different diagrams with their diagonals.

Parallelogram



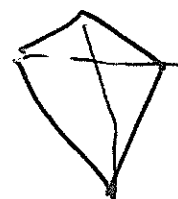
Rhombus



Square



Kite



10) State whether each statement is always true, sometimes true, or never true.

a. A rhombus is a square.

sometimes

b. A square is a rectangle.

always

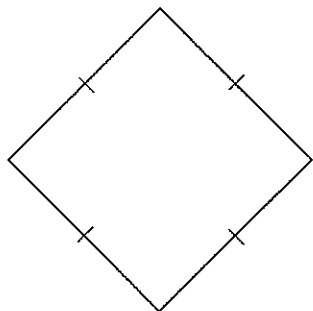
c. Diagonals of a rectangle bisect each other.

always

d. A trapezoid is a parallelogram.

never

9. Judging by appearance, classify the figure in as many ways as possible.



- ☒ A rectangle, square, quadrilateral, parallelogram, rhombus
☐ B rectangle, square, parallelogram
☐ C rhombus, trapezoid, quadrilateral, square
☐ D square, rectangle, quadrilateral

11. Which of the following quadrilaterals have diagonals that are perpendicular?

V. Parallelogram

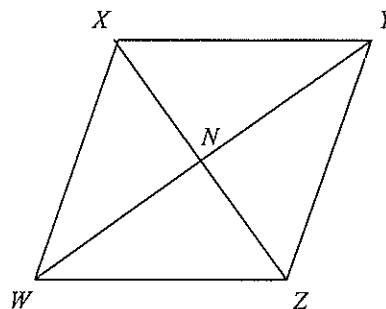
VI. Rhombus ✓

VII. Square ✓

VIII. Kite ✓

- F. I
~~G. II and III only~~
~~H. II, III, and IV~~
~~I. II and IV only~~
~~J. All of the above~~

10. $WXYZ$ is a parallelogram. Name an angle congruent to $\angle WZY$.



- A $\angle ZXY$ B $\angle XWZ$ C $\angle ZXW$ ☒ D $\angle WXY$

12. Which of the following quadrilateral is a parallelogram?

I. Rhombus ✓

II. Square ✓

III. Rectangle ✓

IV. Trapezoid ✗

- A. I
 B. II and III
 C. I and III
☒ D. I, II, and III
 E. All of above

Create a quadrilateral flow chart:

